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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/663,239	09/16/2003	Mario Scurati	31175803-005001	2872

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EXAMINER
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KOCZO JR, MICHAEL

ART UNIT	PAPER NUMBER
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3746

MAIL DATE	DELIVERY MODE
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07/20/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

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<b>Office Action Summary</b>	<b>Application No.</b> 10/663,239	<b>Applicant(s)</b> SCURATI, MARIO	
	<b>Examiner</b> Michael Koczo, Jr.	<b>Art Unit</b> 3746	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 16 May 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 12-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 May 2007 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

Applicant's arguments filed on May 16, 2007 have been fully considered but they are not persuasive.

#### ***Election/Restrictions***

Newly submitted claim 20 is directed to an invention that is independent or distinct from the invention originally claimed for the following reasons:

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1 to 11, drawn to a micropump having a plurality of fluid tight chambers, classified in class 417, subclass 148.
- II. Claim 20, drawn to the combination of a micropump and a microfluidic circuit, classified in class 137, subclass 565.01.

The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because it does not require that the pump internal pressure be different from atmospheric pressure. The subcombination has separate utility such as in a microfluidic circuit wherein there is no pressure differential between the fluid tight chambers and the microfluidic circuit.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claim 20 stands withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

### ***Drawings***

The drawings are objected to because parts in section are not hatched (37 CFR 1.84 (h)(3) and 37 CFR 1.84(m)). This would apply to figures 3, 5, 10, and 13 to 20. These figures should be hatched in the manner as shown in figure 2 of the Ahn et al reference. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 112***

Claims 1 to 11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites “a preset internal pressure different from atmospheric pressure.” This is indefinite because atmospheric pressure is not a constant, but varies as a function of time and geographic altitude. For example, the preset internal pressure may be different from atmospheric pressure in Denver, Colorado, but when the pump is moved to New York city, for example, the preset internal pressure may equal atmospheric pressure.

In claim 11 there is no antecedent basis for “said electrodes”.

***Claim Rejections - 35 USC § 102***

Claims 1 to 4, 6, 8 and 11 stand rejected under 35 U.S.C. 102(b) as being anticipated by Ahn et al (US 6,116,863). Ahn et al disclose a micropump having a body 24, 26 of semiconductor material (col. 7, ll. 1 and 2) having a plurality of fluid-tight chambers 32. These chambers are selectively openable by valves 89a and 89b. Reciting a “preset internal pressure” is not limiting because it could be any pressure. A preset internal pressure is furthermore not a structural limitation, but merely the intended use of the device. The chambers are sealed by a diaphragm 24 which is operated electrically via drivers 40, 60a and 60b. The diaphragm may be made of a dielectric material (col. 7, ll. 3 to 7) such as silicon dioxide (col. 7, l. 16), or a semiconductor material (col. 7, ll. 1 and 2). Regarding claim 11, as understood, reciting that the current source supplies current that melts the electrodes is merely a recitation of a desired result.

The current source of Ahn et al is presumed to be capable of supplying sufficient current to melt the electrodes 72a and 76a.

Regarding claim 11, applicant argues that Ahn requires intact electrodes and would not function if the delicate membranes were destroyed. The limitation “supplying a current (I) that melts said electrodes” is a recitation of intended use which is not limiting in an apparatus claim. The test is whether or not the structure of Ahn et al is capable of melting the electrodes, regardless of the consequences.

#### ***Claim Rejections - 35 USC § 103***

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ahn et al. The specific thickness of the diaphragm is deemed to be a matter of design choice. No unobvious or unexpected result is attained by limiting the thickness of the diaphragm to less than or equal to 1 $\mu$ m. See col. 7, l. 24 of Ahn et al which states that the thickness of the diaphragm is 10 microns. This is not deemed sufficiently different from the claimed thickness to effect an unobvious or unexpected result.

#### ***Allowable Subject Matter***

Claims 7, 9 and 10 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

***Conclusion***

This application contains claims 12 to 19 drawn to an invention nonelected with traverse in the reply filed on December 6, 2006. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

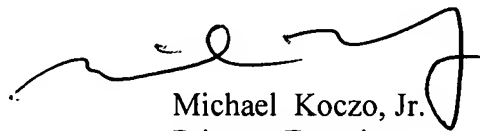
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry relating to patent applications in general should be directed to the Patent Assistance Center at 1-800-786-9199.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Kocz, Jr. whose telephone number is 571-272-4830. The examiner can normally be reached on M-Th; 7:00-3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anthony D. Stashick can be reached at 571-272-4561. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read "Michael Koczo, Jr.", with a stylized flourish at the end.

Michael Koczo, Jr.  
Primary Examiner  
Art Unit 3746